

# Repeating Patterns

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**Reporting Category** Patterns, Functions, and Algebra

**Topic** Identifying, describing, and extending repeating patterns

## Materials

- Collection boxes from “The Button Box” activity (K.15)
- Strips of drawing paper
- Construction paper
- Small objects (e.g., pattern blocks, keys, bread tags) for tracing
- Pattern blocks
- Strips of drawing paper

## Vocabulary

*pattern, core, repeating, predict, describe, different, compare, same*

## Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

Note: Before beginning this activity, make pattern task cards by tracing small objects in various repeating patterns on half-sheets of construction paper. Underline the core pattern, and include two complete repetitions of the pattern on each card, as shown below. These cards may be laminated for repeated use.



1. Introduce students to pattern activities by arranging students in a pattern. Have 10 students line up across the front of the room in front of a row of 10 chairs. Point to every other student, and ask him or her sit down. Ask students to describe the “people pattern” that has occurred. Ask what position the next person in the line would be—sitting or standing. Add three additional students to the line, and have students decide what their positions should be. After all these students have returned to their usual seats, have six different students come forward, and arrange them in a different pattern—e.g., one standing, two sitting, one standing, two sitting. Ask students to describe the pattern. Extend the pattern by adding four additional students and having the class decide what their positions should be. Once students understand the process, select a student to devise a new pattern, check it with you, and then direct six different students to demonstrate it. Have the class figure out the pattern.
2. After all students have participated in “people patterns,” have them sit in a circle. Demonstrate a “snap-clap pattern” with your hands. Have students repeat the pattern after you. Change the snap-clap pattern a few times. Again, once students understand the process, allow a student to lead this activity.

3. Explain to students that they will be creating patterns similar to the people patterns and snap-clap patterns but that they will be using objects from their collection boxes. Demonstrate with one of the pattern task cards and the pattern blocks. Discuss how the pattern repeats (e.g., red hexagon, green triangle, blue square). Ask the students what would come next in the pattern, and place the correct pattern block on the task card. Demonstrate how to copy the pattern onto a strip of drawing paper, using the pattern blocks.
4. Put students into small groups, and distribute a strip of drawing paper and a collection box to each group. Have each group arrange 10 objects from their collection box to make a pattern of their own choice. Once they have arranged their pattern and you have checked it, direct students to underline the core pattern and then trace each object carefully before moving it off the strip. Each final pattern drawing should have a total of 10 objects drawn on the strip. If necessary, model for students, using pictures of the snap-snap-clap pattern, which part represents the core of the pattern. For example, in the pattern “snap, snap, clap, snap, snap, clap, snap, snap, clap,” the core of the pattern is underlined. After students have completed the activity, have them describe their patterns to the class.

### **Assessment**

- **Questions**
  - Display seven objects that form a repeating pattern. “What object will come next in this pattern?”
  - “What repeating patterns can you see in every day life?”
- **Journal/Writing Prompts**
  - “Draw an A-B pattern. Draw a different A-B pattern.”
  - Give each student a group of pre-cut shapes. “Draw or write how you would glue your shapes down on the page to make a pattern. Label your pattern.”
- **Other**
  - Show students a pattern task card, and direct them to make the same pattern in three dimensions, using cubes (That is, if the pattern core is A-B-C, the cube pattern core should also be A-B-C.)
  - Display several different patterns, using pattern blocks, cubes, pattern task cards, and/or other means. Ask students to close their eyes. Describe a pattern, using the letters A, B, and C. Have students open their eyes and decide which displayed pattern was described. This can be done as a partner activity.

### **Extensions and Connections (for all students)**

- Give students a wide variety of materials (e.g., buttons, toy cars, socks, seeds, noodles, crayons, wooden blocks), and ask them to use the materials to create different patterns. Encourage students to create patterns other than A-B-A-B.